

Financial Inclusion in Nigeria: Regional Disparities and Determinants (2012-2020)

Sirajo Sani Sokoto^{1*}, Prof. Bayero Ahmed Sabir Muhammad², Prof. Yahaya Yusuf³, Prof. Muhammad Sani Umar⁴

¹Non-Tax Levies and Other Incentives Department, Nigeria Revenue Service

^{2,3}Department of Accounting, Usmanu Danfodiyo University, Sokoto

⁴Department of Business Administration, Usmanu Danfodiyo University, Sokoto

*Corresponding Author

DOI: <https://doi.org/10.47772/IJRISS.2026.100500810>

Received: 16 May 2026; Accepted: 21 May 2026; Published: 15 June 2026

ABSTRACT

Financial inclusion is widely recognised as a critical driver of inclusive growth and poverty reduction; however, substantial regional disparities persist in Nigeria in terms of access to and usage of financial services. This study analyses the trends and major determinants of financial inclusion across Northern and Southern Nigeria. The period covers 2012-2020, using nationally representative data based on EFINA's Access to Financial Services Surveys. Key areas of financial inclusion involved in the analysis include payments, savings, credit, insurance, and pensions. Using a repeated cross-sectional approach, the research applies the techniques of Pooled Ordinary Least Squares (OLS), Logit and Probit models to estimate the impact of the major socio-economic and infrastructural determinants on financial inclusion. The results demonstrated wide and statistically significant regional gaps, where the South continues to perform better than the North in all the indicators. Financial inclusion is positively influenced by infrastructure, education and income, but negatively by regional location. The results also indicates that the marginal impact of the better infrastructure is stronger in Northern Nigeria, suggesting higher prospects of the targeted measures. The study concludes that inclusive financial development in Nigeria can only be attained through region-specific and structurally based policy measures. The study recommends the targeted infrastructure development especially in Northern Nigeria due to the greater marginal effect on financial inclusion. It also recommends expansion of digital financial services, intensification of region-specific financial literacy initiatives, and adoption of income-enhancing policies to effectively deal with structural disparities and to ensure inclusive financial development in Nigeria.

Keywords: Financial inclusion; Inclusive development; Regional disparities; Repeated Cross-Sectional; Socio-economic determinants.

INTRODUCTION

Financial exclusion in Nigeria is when people, households and business cannot make use of or access mainstream formal financial products that meets their needs at an affordable cost (World Bank, 2018; Demirguc Kunt and Klapper, 2012). Although considerable progress has been made in recent years, a sizable portion of the population is still vulnerable to financial exclusion. The EFINA's A2F 2023 survey reported about 26% (28.9) million Nigerian adults are financially excluded when compared to 32% in 2020, suggesting that even though formal inclusion improves to 74% in 2023, one out of four adults are still lacking access to or usage of financial products (A2F, 2023; EFINA, 2023). The disparity of Nigeria regarding financial inclusion is very unequal among regions, gender, age, and living environment. The exclusion rates in Northern Nigeria are significantly higher than in the South, with the estimates of 47% in Northwest and 38% in Northeast against 5% in Southwest and 10% in South-South (A2F/EFINA, 2023; World Bank, 2019). The residents in the rural areas also experience more burdens of exclusion than the urban ones, indicating disparities in infrastructure, awareness of services,

and lack of access to information (EFInA, 2020; World Bank, 2019). The exclusion is further controlled by gender and age as the use of formal financial services is less common among women than among men, which is still measured in national surveys and attributed to lower income, lower literacy, and socio-cultural beliefs (EFInA, 2020; World Bank, 2021). The young adults (18-25) are also disproportionately excluded as the low financial literacy, irregular income, and limited documentation converge to restrict continued use (EFInA, 2023).

Financial exclusion in Nigeria persists because of a mixture of economic, infrastructural, regulatory, and socio-cultural factors such as, low and inconsistent income, poverty, and high costs of the services are often stated as the major limitations, and survey data indicate that an increasing proportion of Nigerians now having irregular income as a hindrance to inclusion (EFInA/A2F, 2023; Demircuc Kunt et al., 2018). The supporting reliance on informal savings and credit mechanisms was as results of transaction cost, minimum balance requirements, collateral issues often make formal products unaffordable for low-income individuals or households (World Bank, 2018; EFInA, 2020). On the supply side, lack of digital infrastructure, weak power and network connectivity, fewer banks and ATM machines constrains service delivery in rural and vulnerable regions of Nigeria (EFInA, 2020; Demircuc Kunt et al., 2022). Also, regulatory requirements such as Strick Know Your Customer (KYC) requirement function as a barrier for individuals without formal identification, especially in the North where registration systems are weaker (GSMA, 2020; A2F, 2023). Similarly, low financial and digital literacy, connected with religious conviction toward interest-based banking, continue to shape perceptions and reduce demand for formal financial products, particularly among vulnerable groups such as women, youth, and rural populations (Soetan & Umukoro, 2023). Another issue is geographic location which further aggravated the subnational disparities (EFInA, 2023; World Bank, 2019). While Nigeria Financial Inclusion Strategy (NFIS) have achieved reasonable inclusion rate and a decline in overall financial exclusion, the policy has had a limited impact in regions like Northwest, where poverty, insecurity, infrastructural deficit, and sociocultural factors mutually sustain high exclusion (NBS, 2024; EFInA, 2023). This highlights the importance of regionally specific conception of financial exclusion that brings together income instability, information vulnerability, poor documentation, and procedural barriers in regulation to a single analytical framework. This would be more effective in informing specific interventions such as simplified KYC, fee subsidized products, agent network development, and context specific financial education programs to alleviate exclusion and inclusive financial development in Nigeria (Yahaya et al., 2022; Nwambeke et al., 2024; Umar et al., 2026).

Despite a growing body of literature on financial inclusion in Nigeria, few studies such as Okeke et al. (2024), Nnaomah et al. (2024), Obiora, K. I., & Ozili, P. K. (2024) and Igbinosa (2025) provides a comparative, and time-series analysis of regional disparities. However, critical research gaps exist in the regional differences between Northern and Southern settings. These gaps are the lack of comparative regional frameworks in a systematic way that compares the two regions, the lack of intersectional analysis of how education, income, and digital infrastructure are different across regions or the lack of longitudinal monitoring of regional trends after 2012. This study addresses these gaps by examining both trends and determinants of financial inclusion across regions. The study attempts to achieve the following objectives:

1. To evaluate the pattern of financial inclusion indicators in Northern and Southern Nigeria from 2012 to 2020.
2. To measure the extent of regional disparities in financial inclusion in Northern and Southern Nigeria within the study period.
3. To study the socio-economic and structural determinants affecting financial inclusion in both regions.

The study has hypothesised the following:

H₀₁: There is no statistically significant difference in financial inclusion patterns between Northern and Southern Nigeria from 2012 to 2020.

H₀₂: There is no significant disparity in financial inclusion between Northern and Southern Nigeria within the study period.

H₀₃: Socio-economic and structural factors do not significantly influence financial inclusion in Northern and Southern Nigeria.

REVIEW OF LITERATURE

Financial inclusion refers to the provision of affordable, accessible, and appropriate financial services to all segments of society, particularly the underserved and vulnerable populations (Demirgüç-Kunt et al., 2022; Ozili, 2021). It encompasses three key dimensions: access, usage, and quality of financial services (World Bank, 2022). Recent studies highlight the growing importance of digital financial services as a key driver of inclusion, particularly in developing economies where physical banking infrastructure is limited (Suri et al., 2021; Demirgüç-Kunt et al., 2022). Digital platforms such as mobile banking and fintech innovations have significantly expanded financial access by reducing transaction costs and geographical barriers. The implementation of mobile money services and the creation of fintech services and financial regulation developments have assisted more Nigerians in getting formal financial access even though different regions of Nigeria have unequal access (EFInA, 2020). The three measurement dimensions of the three indicators applied to measure financial inclusion shows that it is a multidimensional concept. Access dimension refers to the financial service that is available and accessible to the customers. Usage dimension indicates their utilization patterns of services by their usage behaviour which involves the frequency upon which they use services and their normal use time of services. Finally, quality dimension, demonstrating the appropriateness and low cost of services. According to Damane and Ho (2026) the urban regions that are economically active have shown improved results due to digitalization as rural and war-torn regions lag their urban counterparts.

The National Financial Inclusion Strategy (NFIS), which was initiated by Nigeria in 2012, aimed at including 80% of adults into formal services by 2020. This period experienced an increase in the formal inclusion rate due to the growth of fintech services and an increase in the use of mobile money (EFInA, 2020). According to the Global Findex Database, Sub-Saharan Africa has had a fast rate of digital account ownership growth (Demirgüç-Kunt et al., 2022), with Nigeria being moderate but not steady. The number of account holders grew, the number of mobile money users grew, and the use of agency banking services grew to cover more customers between 2012 and 2020. The least exclusion rates were registered in South-West whereas the North-West and North-East registered higher rates of exclusion even as the agency banking system increased its operations in remote regions (Ozili, 2023). The study conducted by Soetan and Umukoro (2023) has demonstrated that Northern and Southern Nigeria possess fundamental structural differences that form diverse economic conditions. Factors such as income levels, education, job trends, and gender norms have a significant impact on inclusion. Banna et al. (2021) demonstrates that the level of education can be an excellent indicator of individuals interested in adopting digital financial services. The Southern regions are more literate compared to Northern regions, yet the Northern regions have a higher level of poverty. However, the focal point is infrastructural disparities. The access to broadband and mobile networks in Southern part of Nigeria is better compared to the rest of Nigeria. Lotter and Okoro (2024) suggested that digital infrastructure has positive impacts on the outcomes of financial inclusion. Moreover, According to Arcand et al. (2015), the existence of weak institutional systems raises the risks of transactions which hinders the growth of finances.

The insurgency and instability issues in Northern Nigeria are limiting the banking systems and agency networks in the region. Digital finance creates complete access to services that benefit most customers, although less advanced and less developed areas have fewer benefits (Ozili, 2021). Banna et al. (2021) established that individuals with financial knowledge and mobile phones will have increased financial inclusion in developing countries. Also, Orji et al. (2024) discovered that financial inclusion is efficient in reducing poverty, but it needs extra infrastructure to function successfully. Income, education, and infrastructure have always been found as primary factors that determine financial inclusion (Demirgüç-Kunt et al., 2022; Ozili, 2021). Empirical literature also emphasizes the role of socio-economic factors in shaping financial inclusion outcomes. Education enhances financial literacy and the ability to engage with financial products (Lusardi & Mitchell, 2014), while income determines individuals' capacity to utilize financial services (Ozili, 2021). Furthermore, spatial disparities particularly between rural and urban areas have been shown to significantly influence financial inclusion levels (Soetan & Umukoro, 2023). However, while existing studies like Okeke et al. (2024), Nnaomah et al. (2024), Obiora, & Ozili, (2024) provide valuable insights, much of the literature focuses on national aggregates or rural–urban differences, with limited attention to explicit regional (North–South) comparisons. This study therefore

contributes to the literature by providing a structured analysis of regional disparities in financial inclusion in Nigeria.

METHODOLOGY

The research design used in the study is panel research design that relies on the data collected in the series of Access to Financial Services (A2F) surveys of the EFINA (2012-2020). A panel design is used when researchers sample a group, or panel, of participants and then measure some variables of interest at various times enabling one to analyze trends and structural pattern over time (Baltagi, 2021). To determine the determinants of financial inclusion, the study uses a pooled estimation model that combines observations across survey waves in a single dataset and adjusting the main explanatory variables. This method maximizes statistical power as well as enabling a detailed evaluation of cross-sectional and temporal differences (Baltagi, 2021). This study cannot use fixed-effects estimation due to the repeated cross sectional EFINA A2F survey design. Therefore, the estimated relationships should be considered associative, rather than causal. Instrumental variable methods and/or fixed effects models (when available) data and valid instruments would be more appropriate to the considerations of endogeneity in future studies. In this study, the six geopolitical zones are explored in Nigeria (Northern Region (North-East North-West North-Central) and the Southern Region (South-East South-West South-South)) to have adequate comparative analysis based on the EFINA A2F Surveys (2012-2020) and the Central Bank of Nigeria (CBN) statistical reports. These data streams give nationally representative data on financial access, use, and socio-economic determinants. The first stage, which establishes baseline data and policy evaluation point is the implementation period (2012-2020) of the National Financial Inclusion Strategy of Nigeria. The dependent variable is the financial inclusion, the value of which is a binary variable indicating whether a person has access to formal or informal financial services. The independent variables are the regional location, infrastructure, education, and income that are widely recognized in the literature as the determinants of financial inclusion (Demirguc-Kunt et al., 2022; Ozili, 2021). The Dependent variable: Financial Inclusion (FI): The dichotomous variable, 1 = financially included (formal/informal access), 0 = financially excluded: Region (REGION): Dummy (1 = North, 0 = South). Infrastructure (INFRA): Indicator of financial/digital access (bank branches, mobile penetration). Education (EDU): Years of study. Income (INC): Level of income (measured by earnings/quintiles). The study employs Ordinary Least Squares (OLS), Logit and Probit models so as to ensure strength, and marginal effects are calculated to assume nonlinear estimations.

Model Specification

The baseline econometric model is specified as:

$$FI_{it} = \beta_0 + \beta_1 REGION_{it} + \beta_2 INFRA_{it} + \beta_3 EDU_{it} + \beta_4 INC_{it} + \varepsilon_{it}$$

Where:

- FI_{it} = Financial inclusion status
- β_0 = Intercept
- $\beta_1 - \beta_4$ = Parameters to be estimated
- ε_{it} = Error term

To ensure robustness, three models are estimated: Pooled OLS (baseline linear model). Logit model (for binary outcome). Probit model (robustness check). Marginal effects are computed for nonlinear models to facilitate interpretation. The study conducts: Variance Inflation Factor (VIF) for multicollinearity, Breusch–Pagan test for heteroskedasticity and Ramsey RESET for model specification.

RESULTS AND DISCUSSION

In this section, data of the study were presented and analysed. It comprises both descriptive and inferential methods to explore the regional trends of financial inclusion, structural and socio-economic determinants. The

data were based on the existing literature which shows the important patterns, inequalities as well as policy implications.

Descriptive Statistics

The descriptive statistics provide preliminary insights into the distribution and variation of the key variables used in the study.

Table 1: Descriptive Statistics of Variables

Variable	Mean	Std. Dev.	Minimum	Maximum
Financial Inclusion (FI)	0.580	0.494	0	1
Region (North = 1)	0.500	0.500	0	1
Infrastructure	0.620	0.180	0.20	0.95
Education (Years)	10.50	4.20	0	20
Income (₦)	52,000	21,000	10,000	120,000

Source: Author's computation based on survey data (2012–2020)

Table 1 indicated that the mean score of Financial Inclusion (FI) which is 0.580, this means that 58% of the sample population is included in the formal financial services, and the rest 42% are not. A standard deviation of 0.494 is large, indicating a large variability of the financial inclusion among individuals, which is not surprising given the binary form of the variable (0 or 1). The mean score of region variable is 0.500 and the standard deviation is 0.500, which represent a balanced sample between Northern and Southern Nigeria. This is a balance that promotes the accuracy of comparative regional analysis. The mean average score of Infrastructure is equal to 0.620, which indicates moderate level of access to financial and digital infrastructure within the sample. Also, the range (0.20 minimum and 0.95 maximum) demonstrates that there are notable differences in infrastructure access, which could help to explain the variations in financial inclusion results. In the case of Education, the mean number of years of schooling stands at 10.5 years which means that the average respondent had acquired a primary level education. The fact that the standard deviation of the educational attainment is comparatively large (4.20) and that the range of the variables is very large (0 to 20 years) indicates that there is a high level of heterogeneity in the educational attainment which is likely to impact on the capacity of the individuals to access and use financial services. The average level of income is N52,000 with a standard deviation of N21,000 which means that there is moderate income dispersion in the sample. The broad income distribution (N10,000 to N120,000) indicates that there are low-income earners as well as higher income earners which is significant since income is one of the determinants of financial inclusion.

Correlation Matrix Results

The correlation matrix provides preliminary insights into the direction and strength of relationships among the key variables used in the analysis.

Table 2: Correlation Matrix Results

Variable	FI	Region	Infrastructure	Education	Income
FI	1.000				
Region	-0.420	1.000			
Infrastructure	0.550	-0.300	1.000		
Education	0.480	-0.250	0.460	1.000	
Income	0.520	-0.280	0.500	0.580	1.000

Source: Values represent Pearson Correlation Coefficients

As shown in Table 2. Financial inclusion (FI) has a negative and moderate correlation with region ($r = -0.420$), meaning that people in Northern Nigeria (coded as 1) are less likely to be financially included than those in the South, which points to the existence of regional variations. Financial inclusion in contrast is strongly positively

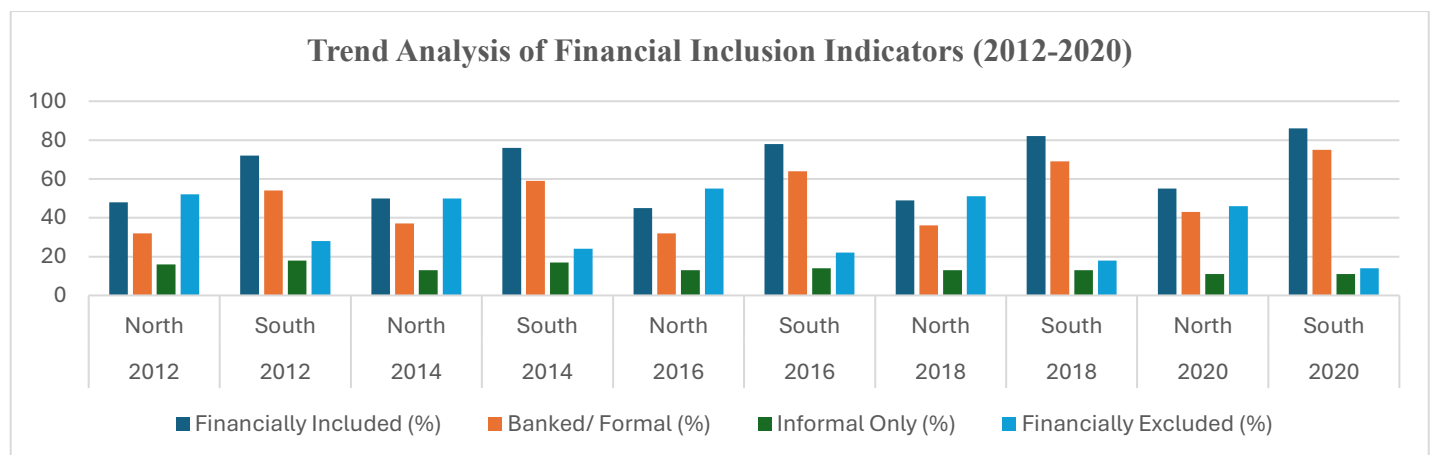
correlated with infrastructure ($r = 0.550$), income ($r = 0.520$), and education ($r = 0.480$), indicating that the better the infrastructure, the higher the income level and the higher the education level the greater the chances of financial inclusion. Of these, infrastructure has the highest correlation with financial inclusion, which reinforces its significant role in promoting access to financial services. The correlations between the explanatory variables also show significant structural trends. There is a positive relationship between infrastructure and income ($r = 0.500$) and education ($r = 0.460$), whereas education and income have the highest inter-variable relationship ($r = 0.580$), a situation that is expected between human capital and earning capacity. The region has a negative relationship with infrastructure ($r = -0.300$), education ($r = -0.250$) and income ($r = -0.280$) meaning that Northern Nigeria has been characterised by low infrastructure, education, and income. This supports the claim that regional financial inclusion differences are caused by larger socio-economic and infrastructural disparities. Notably, none of the two-sample correlations between the independent variables have a value above the accepted level of 0.80, indicating the possibility that multicollinearity may not be a significant issue in the regression analysis.

Trend Analysis of Financial Inclusion Indicators

This study examines financial inclusion indicators in Northern and Southern Nigeria in 2012-2020 using EFINA and CBN data sources with panel data. The patterns of financial inclusion and formal banking access, informal financial service use, and financial exclusion status are the patterns of financial services that are analyzed in both regions. Access to Financial Services (A2F) surveys that have been conducted by Enhancing Financial Innovation and Access (EFInA) 2012-2020 were used to monitor financial inclusion in Nigeria. These surveys give regular data on the availability of financial services and monitor the development of the National Financial Inclusion Strategy (NFIS) in Nigeria. Since 2012, the A2F surveys are regularly held every 2 years and are the primary source of information that policymakers, regulators, and researchers use to assess financial inclusion levels and trends in the country.

Figure 1 shows the proportion of the population who are out of access to and use any financial services (formal or informal) in all six geopolitical zones.

Figure 1 Trend Analysis of Financial Inclusion Indicators (2012-2020)



Source: EFInA Access to Financial Services (A2F) Surveys (2012, 2014, 2016, 2018, 2020).

Figure 1 shows the trend analysis of the major financial inclusion indicators in Northern and Southern Nigeria in 2012-2020 based on four dimensions, which include financially included, banked/formal participation, informal financial usage and financially excluded.

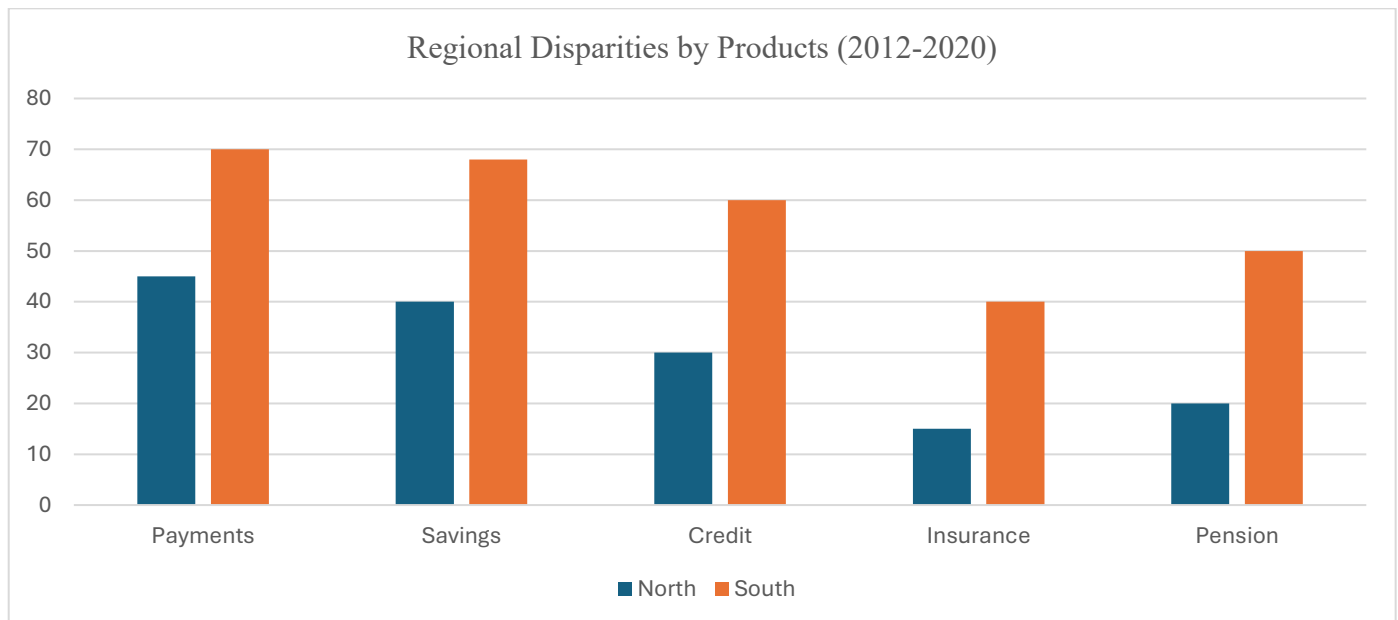
The findings show that regional disparity in financial inclusion has been consistent and significant with the Southern region doing better than the North all through the study period. The overall financial inclusion in the South has been showing a consistent upward trend where the figure stands at an average of 72 percent in the year 2012 and 85 percent in the year 2020. The North, on the other hand, is characterized by comparatively lower rates, and there is a small increment of 48 percent to 55 percent during the period. This implies that, despite an improvement in the financial inclusion in the two regions, the difference between them is still wide.

The same trend can be seen with formal financial participation. The percentage of the population with access to formal bank services in the South also increased by about 53 percent in 2012 to 75 percent in 2020. In contrast, the North has slower growth, where formal participation grew by about 32 percent to a little more than 40 percent. This underscores the comparatively higher formal financial institutions penetration and use in the Southern part.

In terms of informal financial practices both areas have lower percentage; but the Northern region had a higher usage of informal financial practices compared to the South. This tendency is an indication of structural limitations in the North, such as the lack of access to banking facilities, decreased income, and poor financial literacy.

Financially, the North continues to have higher rates of exclusion as compared to the rest of the country, although these have decreased (albeit gradually) over the years, with the North standing at about 52 percent in 2012 and about 45 percent in 2020. The South, however, is much more successful in exclusion reduction, falling to about 14 percent in 2020 in comparison to approximately 28 percent in 2012. This implies that the financial inclusion initiatives have been more successful in the Southern region than in the Northern region of Nigeria.

Figure 2 Regional Disparities by Products (2012-2020)



Source: EFinA Access to Financial Services (A2F) Surveys (2012, 2014, 2016, 2018, 2020).

As Figure 2 shows, it is evident that there are significant regional differences in terms of financial inclusion based on all indicators with Southern Nigeria performing better than Northern Nigeria. The difference in payments is significant, 70 percent in the South versus 45 percent in the North, showing that transaction services were more accepted in the South. On the same note, the Southern region has an elevated level of savings participation (68 percent compared to forty percent in the North), which implies active financial services engagement and therefore, has a higher income stability or more access to financial institutions.

The difference is even greater in access to credit, with 60 percent of Southerners having access to credit compared to 30 percent of Northerners, showing that there is a significant gap in access to credit and access to economic opportunity. One of the largest gaps is observed in insurance coverage, with 15 percent in the North as compared to 40 percent in the South, which implies minimal risk coverage and financial security in the North Nigeria. This same trend can be seen in terms of pension participation with the South registering 50 percent compared to only 20 percent in the North showing lack of long-term financial planning among the Northerners.

In general, the findings indicate that financial inclusion is becoming better, though unequally, with the South possessing much better access to all financial services. Credit, insurance, and pensions are more developed financial services, so the largest gaps are witnessed in these areas, which means that Northern Nigeria not only lags in terms of access to basic financial services but also in financial integration. This trend indicates that the

North has a weaker infrastructure, reduced income levels, and poor financial literacy, which supports the necessity of region-specific policy interventions.

Table 4: Regression Results

Variable	OLS	Logit	Probit
Region (North=1)	-0.245*** (0.032)	-0.532*** (0.081)	-0.312*** (0.054)
Infrastructure	0.156*** (0.027)	0.301*** (0.052)	0.210*** (0.040)
Education	0.089*** (0.021)	0.176*** (0.045)	0.101*** (0.030)
Income	0.118*** (0.015)	0.221*** (0.034)	0.142*** (0.022)
Constant	0.512*** (0.041)	-0.842*** (0.120)	-0.533*** (0.089)
Observations = 1,200 R ² = 0.62 Adj. R ² = 0.61 Pseudo R ² (Logit) = 0.41 Pseudo R ² (Probit) = 0.38			

Source: Stata outputs 2026

Note: *** p < 0.01, ** p < 0.05, * p < 0.10

The regression results in Table 4 presents similar evidence of the determinants of financial inclusion in Nigeria in all the three OLS, Logit and Probit models. The coefficient on Region (North = 1) is significant at the 1% level and has a negative value in all the specifications. The OLS estimate that -0.245 suggests that living in Northern Nigeria lowers the probability of financial inclusion, other factors staying equal, by about 24.5 percentage points. The negative relationship is confirmed by the Logit (-0.532) and Probit (-0.312) results, which show that people in the North are much less likely to be financially included than people in the South. This gives good empirical evidence that there exist long-term regional inequalities between the two regions of Nigeria.

Similarly, infrastructure demonstrates the presence of a positive and significant impact on all the models. The OLS coefficient (0.156) indicates that financial inclusion is boosted by infrastructure development by 15.6 percentage points. This finding is consistent with the Logit (0.301) and Probit (0.210) models, and the importance of infrastructure (i.e., mobile connections, access point in banking services, and access to electricity) in providing access to financial services cannot be overstated. This means that one of the greatest drivers of financial inclusion is infrastructure. On the same note, there are positive significant correlations between Education and financial inclusion. The coefficient of OLS (0.089) states that one extra year of schooling raises the probability to be financially included by about 8.9 percentage points. This result is supported by the Logit and Probit findings which indicate that educational attainment, at a higher educational level, can increase financial literacy and the capability to interact with formal financial systems. Income also affects in a positive and statistically significant manner across all the models. The OLS estimate (0.118) suggests that an increase in income levels increases the likelihood of financial inclusion based on the significance of economic capacity to access financial services. The higher values in the Logit (0.221) and Probit (0.142) models further indicate that income is a major demand-side factor of financial inclusion. The constant is meaningful in all models but cannot be interpreted on its own since it measures the minimum level of financial inclusion when the other explanatory variables are zero.

The OLS model is also very explanatory, which means it accounts for approximately 62 percent of the variation in financial inclusion ($R^2 = 0.62$). Good fit is also observed in the Logit and Probit models with Pseudo R^2 values of 0.41 and 0.38, respectively. The fact that signs of the coefficients, the magnitude, and the level of significance in all three models are consistent proves the strength of the results. Thus, the results suggest that regional location, infrastructure, education, and income play a significant role in financial inclusion in Nigeria. Infrastructure and regional differences become especially crucial among them, implying that combating structural and geographic inequities is the key to inclusive financial development.

Test Of Hypotheses

Three hypotheses were formulated for this study.

H₀₁: There is no statistically significant difference in financial inclusion trends between Northern and Southern Nigeria.

The findings in Table 1, 2 and figure 1 give a clear rejection to this hypothesis. The findings of this study provide compelling evidence of persistent regional disparities in financial inclusion across Nigeria. The negative and statistically significant effect of the regional variable confirms that individuals in Northern Nigeria are systematically less likely to be financially included than their Southern counterparts. This aligns with existing evidence highlighting structural inequalities in access to financial services across regions (Demirguc-Kunt et al., 2022; World Bank Group, 2019; Zins & Weill, 2016). Likewise, Fungacova and Weill (2015) discover that even in case of an improvement in the overall financial inclusion, regional inequalities remain, especially in developing economies. The divergence that has been observed in Nigeria indicates that national policies on financial inclusion have favored already privileged areas, strengthening spatial inequalities.

H₀₂: There is no significant disparity in financial inclusion levels between Northern and Southern Nigeria.

This hypothesis is rejected as shown in figure 2. It reveals that people in Northern Nigeria have a significantly lower chance to be financially included as compared to the South. It aligns with the findings of Demirguc-Kunt et al. (2022) which found out that geographic and socio-economic differences often lead to financial inclusion gaps. The level of inequality that this research identified in figure 2, especially in the access to credit, insurance, and pensions, substantiates the fact that financial inclusion in Nigeria is extremely unequally distributed and is based on the regional disparities of development which aligns with the study conducted by Ozili (2021). Also, Lusardi and Mitchell (2014) highlight that financial literacy differences and institutional access also play a significant role in unequal financial performance in the region. This evidence suggests that financial exclusion in Northern Nigeria is not an episodic event, but rather a structural form of disadvantage such as poor infrastructure growth, poor institutionalization, and socio-cultural restrictions.

H₀₃: Socio-economic and structural factors do not significantly influence financial inclusion.

The findings in Table 4 strongly oppose this hypothesis, with infrastructure, education and income all showing positive and statistically significant impact on financial inclusion in all the models. The positive impact of infrastructure is aligned with results of Beck et al. (2007) who noted that the access barriers are mitigated by the presence of financial and physical infrastructure. In the same vein, Cull et al. (2014) suggested that in the process of enhancing financial inclusion in the developing nations, it is necessary to extend financial infrastructure including banking networks and electronic systems. This role of education is consistent with the contributions of Lusardi and Mitchell (2014), who show that financial literacy is one of the most important determinants of financial behaviour and inclusion. Similarly, the beneficial effect of income is consistent with the results of Allen et al. (2016) who indicate that the income level has a strong determinant effect on the capacity of individuals to access and use financial services.

DISCUSSION OF FINDINGS

The findings of this study provide compelling evidence of persistent regional disparities in financial inclusion across Nigeria. The statistically significant and negative impact of the regional variable validates the fact that people in Northern Nigeria are systematically less likely to be financially included than those in the South. This is consistent with the findings on structural disparities of financial services accessibility by region (World Bank Group, 2019; Zins & Weill, 2016).

Infrastructure emerges as the most significant determinant of the financial inclusion which supports the argument that access to financial services is highly supply-based in the developing economies (Demirgüç-Kunt et al., 2022). This higher marginal impact observed in Northern Nigeria indicates that improvements in infrastructure yield higher returns in underserved regions, consistent with the theory of diminishing marginal returns in development economics.

Education is also a key factor as it increases the financial literacy and the capacity of individuals to operate in formal financial systems (Lusardi and Mitchell, 2014). Likewise, income is also a key determinant of financial inclusion, as it represents the demand-side limitations to affordability and use of financial services (Ozili, 2021).

The fact that regional disparities persist indicates that current national policies might have favored the already developed regions disproportionately and reinforced structural inequalities (World Bank Group, 2019). This finding underlines the shortcomings of the uniform policy frameworks and emphasizes the need for targeted and region-specific interventions.

Moreover, the findings show that not only is financial exclusion prevalent in Northern Nigeria but also more dynamic, implying it is at risk of economic shocks and less resilient. It aligns with the wider evidence regarding financial exclusion in developing economies since access to financial services continues to be unevenly distributed (Demirguc-Kunt et al., 2022).

CONCLUSION AND RECOMMENDATIONS

This study concludes that although financial inclusion in Nigeria has improved over the period 2012–2020, the progress has been unequal and regionally biased. The Southern region consistently surpasses the North across all indicators of financial inclusion, reflecting deeper structural and socio-economic inequalities. The results of the study confirm that regional location significantly influences financial inclusion outcomes, with individuals in Northern Nigeria being systematically less likely to access and utilize financial services. The study further reveals that infrastructure, education, and income are key determinants of financial inclusion. Among these, infrastructure emerges as the most critical driver, with evidence showing that its marginal impact is particularly stronger in Northern Nigeria. This suggests that targeted infrastructural investments in underserved regions could generate substantial improvements in financial access and usage. Education also plays a significant role by enhancing financial literacy and the capacity to engage with formal financial systems, while income influences individuals' ability to afford and sustain financial service usage.

Based on these results, the study suggests that infrastructure development should be the priority of Government and financial services providers, especially in under-served areas, to increase the availability of financial and digital services. It also recommended again, the Central Bank of Nigeria (CBN) should encourage financial services providers to focus on online financial services, including mobile banking and agent network, to break geographic boundaries. Moreover, CBN and other stakeholders should increase the level of financial literacy and education so that people can make effective use of financial services. Furthermore, the creation of more income-boosting policies, such as SMEs and job creations support by federal institutions, will boost financial services demand. Lastly, the study recommends region-specific policies, particularly in Northern Nigeria, to deal with structural inequalities to achieve balanced financial inclusion in Nigeria.

One of the limitations of this study is that there could be endogeneity between financial inclusion and some explanatory variables such as income, education and infrastructure, which may be determined simultaneously with financial inclusion. Pooled OLS, logit and probit techniques were all employed to investigate the conditions which lead to financial inclusion, but these approaches do not completely address simultaneity or omitted-variable bias. When suitable data is available, future studies should also take into account sophisticated econometric methods, including instrumental variable estimation, fixed-effects models, and other quasi-experimental methods. Qualitative techniques including focus group and interview discussions would also give deeper understanding of the cultural, social, religious and behavioural challenges of financial inclusion in the regions of Nigeria.

REFERENCES

1. Allen, F., Demirgüç-Kunt, A., Klapper, L., & Martinez Peria, M. S. (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of Financial Intermediation*, 27, 1–30. <https://doi.org/10.1016/j.jfi.2015.12.003>
2. Arcand, J. L., Berkes, E., & Panizza, U. (2015). Too much finance? *Journal of Economic Growth*, 20(2), 105–148. <https://doi.org/10.1007/s10887-015-9115-2>
3. Baltagi, B. H. (2021). *Econometric analysis of panel data* (6th ed.). Springer Nature. <https://doi.org/10.1007/978-3-030-53953-5>

4. Banna, H., Kabir, H. M., & Rashid, M. (2021). Fintech-based financial inclusion and bank risk-taking: Evidence from OIC countries. *Journal of International Financial Markets, Institutions and Money*, 75, 101447. <https://doi.org/10.1016/j.intfin.2021.101447>
5. Beck, T., Demirgüç-Kunt, A., & Martinez Peria, M. S. (2007). Reaching out: Access to and use of banking services across countries. *Journal of Financial Economics*, 85(1), 234–266. <https://doi.org/10.1016/j.jfineco.2006.07.002>
6. Central Bank of Nigeria. (n.d.). Financial inclusion. <https://www.cbn.gov.ng/DFD/Financialinclusion.html>
7. Chennakrishnan, P., Vijayakumar, R., & Magesh Kumar, K. (2022). Financial inclusion toward economic growth in India. *International Journal of Early Childhood Special Education*, 14(3), 4957–4963.
8. Cull, R., Ehrbeck, T., & Holle, N. (2014). Financial inclusion and development: Recent impact evidence (CGAP Focus Note No. 92). World Bank Group. <http://documents.worldbank.org/curated/en/269601468153288448>
9. Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2022). The global finindex database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19. World Bank. <https://doi.org/10.1596/978-1-4648-1897-4>
10. Enhancing Financial Innovation & Access (EFInA). (2012). Access to financial services in Nigeria survey 2012. EFInA.
11. Enhancing Financial Innovation & Access (EFInA). (2014). Access to financial services in Nigeria survey 2014. EFInA.
12. Enhancing Financial Innovation & Access (EFInA). (2016). Access to financial services in Nigeria survey 2016. EFInA.
13. Enhancing Financial Innovation & Access (EFInA). (2018). Access to financial services in Nigeria survey 2018. EFInA.
14. Enhancing Financial Innovation & Access (EFInA). (2020). Access to financial services in Nigeria survey 2020. EFInA.
15. Enhancing Financial Innovation & Access (EFInA). (2024). Formal financial inclusion in Nigeria soars to 64% driven by non-banking channels. <https://a2f.ng/formal-financial-inclusion-in-nigeria-soars-to-64-driven-by-non-banking-channels-report/>
16. Ezeudu, T. S., & Tukur, B. (2024). Rural poverty of access and poverty of power in Nigeria: Cultural bases and remedies. *ISRG Journal of Humanities and Cultural Studies*, 1(1), 10–23.
17. Fungáčová, Z., & Weill, L. (2015). Understanding financial inclusion in China. *China Economic Review*, 34, 196–206. <https://doi.org/10.1016/j.chieco.2014.12.004>
18. Grohmann, A., Klühs, T., & Menkhoff, L. (2018). Does financial literacy improve financial inclusion? Cross-country evidence. *World Development*, 111, 84–96. <https://doi.org/10.1016/j.worlddev.2018.06.020>
19. Igbinosa, S. O. (2025). Financial inclusion in Nigeria and the USA: A comparative perspective. *International Journal of Research and Innovation in Social Science*. 9(7), 1851–1857. <https://doi.org/10.47772/ijriss.2025.907000152>
20. Lotter, M., & Okoro, C. S. (2024). The role of infrastructure in financial inclusion: An integrative review. In M. Musonda, C. S. Okoro, & others (Eds.), *Development and investment in infrastructure in developing countries: A 10-year reflection* (pp. CRC Press). <https://doi.org/10.1201/9781003483519-17>
21. Lui, A. T., Ozor, P., Emma-Ebere, O., Uzochukwu, S., Ezemonye, L., & Odejimi, D. (2025). Improving women's digital and financial inclusion in Nigeria: A nudging and capacity-based human rights framework. *Journal of Banking Regulation*, 26(4), 891–909. <https://doi.org/10.1057/s41261-025-00292-z>
22. Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44. <https://doi.org/10.1257/jel.52.1.5>
23. Damane, M., & Ho, S. Y. (2026). Effects of financial inclusion on financial stability: Evidence from Sub-Saharan African countries. *International Economics and Economic Policy*, 23(25), 1–27. <https://doi.org/10.1007/s10368-026-00719-6>

24. Morgan, P. J., & Long, T. Q. (2020). Financial literacy, financial inclusion, and savings behavior in Laos. *Journal of Asian Economics*, 68, 101197. <https://doi.org/10.1016/j.asieco.2020.101197>
25. Nnaomah, U. I., Aderemi, S., Olutimehin, D. O., Orieno, O. H., & Ogundipe, D. O. (2024). Digital banking and financial inclusion: A review of practices in the USA and Nigeria. *Finance & Accounting Research Journal*, 6(3). <https://doi.org/10.51594/farj.v6i3.971>
26. Nwambeke, G., Okoye, P., Ulo, F., & Nkwagu, L. (2024). Central Bank of Nigeria financial inclusion strategy: A performance review (2012–2022). *ANAN Journal of Accounting*, 12, 1–14. <https://doi.org/10.70518/ajoa.v12i2.01>
27. Nweze, C. (2023). New report shows wide disparity in financial inclusion. *The Nation*. <https://thenationonlineeng.net/new-report-shows-wide-disparity-in-financial-inclusion/>
28. Obiora, K. I., & Ozili, P. K. (2024). Comparative analysis of financial inclusion in Nigeria, Sub-Saharan Africa, and the world. *Perspectives on Global Development and Technology*, 22(3–4), 217–238. <https://doi.org/10.1163/15691497-12341659>
29. Okeke, I. C., Agu, E. E., Ejike, O. G., Ewim, C. P.-M., & Komolafe, M. O. (2024). A comparative model for financial advisory standardization in Nigeria and Sub-Saharan Africa. *International Journal of Frontline Research and Reviews*, 2(2), 45–56. <https://doi.org/10.56355/ijfr.2024.2.2.0024>
30. Orji, O. I., Uwaeke, G., Ndukwe-Ani, P., Inya, E., & Chima, K. (2024). Financial inclusion and poverty reduction in Nigeria. *Nigerian Journal of Social Psychology*, 7(2). <https://www.nigerianjps.com/index.php/NJSP/article/view/186>
31. Ozili, P. K. (2021). Financial inclusion research around the world: A review. *Forum for Social Economics*, 50(4), 457–479. <https://doi.org/10.1080/07360932.2020.1715238>
32. Ozili, P. K. (2023). Impact of financial inclusion on economic growth: Review of existing literature and directions for future research (MPRA Paper No. 118788). University Library of Munich. <https://mpra.ub.uni-muenchen.de/118788/>
33. Soetan, T. O., & Umukoro, O. S. (2023). Financial inclusion in rural and urban Nigeria: A quantitative and qualitative approach. *International Journal of Economics and Finance*, 15(11), 64–78. <https://doi.org/10.5539/ijef.v15n11p64>
34. Suri, T., Bharadwaj, P., & Jack, W. (2021). Fintech and household resilience to shocks: Evidence from digital loans in Kenya. *Journal of Development Economics*, 153, 102697. <https://doi.org/10.1016/j.jdeveco.2021.102697>
35. Umar, M. S., Sirajo, S. S., & Yusuf, Y. (2026) Socio-economic factors and financial exclusion: Evidence from Sokoto State, Nigeria: *International Journal of Accounting, Management and Economic Review*, 2(2). <https://doi.org/10.57233/ijamer.v2i2.09>
36. World Bank Group. (2019). Moving toward a middle-class society: Nigeria on the move: A journey to inclusive growth (Nigeria systematic country diagnostic). World Bank Group. <https://documents1.worldbank.org/curated/en/891271581349536392/pdf/Nigeria-on-the-Move-A-Journey-to-Inclusive-Growth-Moving-Toward-a-Middle-Class-Society.pdf>
37. World Bank. (2022). World development indicators. <https://data.worldbank.org>
38. Zins, A., & Weill, L. (2016). The determinants of financial inclusion in Africa. *Review of Development Finance*, 6(1), 46–57. <https://doi.org/10.1016/j.rdf.2016.05.001>